

## **Veterinary Behavior Symposium 2025**

### **Research Presentation**

#### **Title**

Effects of an alpha-casozepine based supplement, in addition to a Stress Minimizing Transport Protocol on reducing stress in dogs during inter-organizational transport

#### **Authors**

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#### **Introduction**

Inter-organizational transport of homeless dogs from low-income, rural areas into densely populated, higher resourced areas is increasing annually<sup>1</sup>. Stress due to ambient temperature, high ambient sound levels, and rough handling during crating and uncrating during the transport process poses welfare concerns and often contributes to adverse outcomes<sup>2,3</sup>. Data support the use of psychotropic medication in dogs before such stressful events<sup>4</sup>, but few underserved shelters have ready access to prescription drugs.

This study aimed to test the efficacy of a non-prescription, alpha-casozepine nutraceutical<sup>a</sup> (AC) when used in conjunction with Gigi's Stress-Minimizing Transport Protocol at minimizing stress elevation in dogs during the transport from one shelter to another. We hypothesized that dogs receiving the supplement would have greater attenuation of behavioral and physiological measures of stress than dogs receiving a placebo.

#### **Methods**

Dogs transported from one of five rural shelters in southern Ohio to a central Ohio shelter (Gigi's) between February 21 and August 22, 2024, were enrolled in a prospective, double-blind,

placebo-controlled trial. Each transport group was randomly assigned via a number generator<sup>b</sup> to receive either a double dose of AC or a visually identical placebo containing maltodextrin. Capsules were administered 30 minutes prior to loading dogs onto the transport van. Transport conditions followed Gigi's Stress-Minimizing Transport Protocol, which expands on the Association of Shelter Veterinarians' guidelines<sup>5</sup>. Behavioral observations were recorded immediately before capsule administration and again after unloading and kennel placement at Gigi's. Saliva samples were collected immediately after capsule consumption and again upon arrival at Gigi's.

Saliva samples were frozen and submitted for cortisol assays<sup>c</sup> so that each dog had a pre- and post-transport cortisol measure. During transport, data was collected continuously inside the van for decibel levels and ambient temperature.

A multiple linear regression model was used to determine the effects of AC versus placebo on the change in cortisol levels between pre- and post-transport samples. We included length of stay (LOS), age, weight, intake type, source shelter, minimum and maximum decibels during transport, number of dogs on transport, duration of transport, and temperature during transport as covariates.

## Results

Pre- and post-transport cortisol samples were obtained for 178 dogs, with ages ranging from eight weeks to 11 years ( $M = 2.2$  years). Overall, we found increased cortisol levels after transport ( $M = 0.75$   $\mu\text{g/dl}$ ,  $SD = 1.10$ ). 86 dogs received AC and 94 received placebo. No significant effect on changes in cortisol between pre- and post-transport samples were detected between AC and placebo groups  $F(1, 115) = 1.786$ ,  $p = .184$ . Only intake type and age were significantly correlated with changes in cortisol  $F(2, 115) = 3.402$ ,  $p = .037$  and  $F(2, 115) = 3.995$ ,  $p = .048$ , respectively. In terms of intake type, dogs brought in through a humane seizure had a significantly greater increase in cortisol from pre- and post-transport than dogs that came in as strays or owner surrenders. As dogs increased in age, they showed less of an increase in cortisol levels after transport ( $\beta = -0.0015$ ). Further results based on behavioral scores, decibel levels, temperatures during transport, and transport duration are pending analysis.

## Conclusions

Increasing cortisol levels between pre- and post-transport indicate that dogs experience stress during transport, despite mitigation efforts. The addition of an alpha-casozepine supplement did not provide a detectable benefit, likely due to the severity of stress exceeding the supplement's efficacy, or too brief of a timeframe before transport for it to take effect. Further research is needed to identify key contributing factors to transport-related stress and develop targeted

mitigation strategies. Given the increasing demand to relocate dogs to areas with greater access to care and adoption opportunities, addressing transport-related stress is crucial.

<sup>a</sup> Zylkene (Vetoquinol; Ft. Worth, TX)

<sup>b</sup> Sealed Envelope Ltd. 2022. Available from: <https://www.sealedenvelope.com/simple-randomiser/v1/lists> [Accessed 16 Jan 2024].

<sup>c</sup> Salimetrics, LLC, Carlsbad, California

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